WHAT IS CLAIMED IS:

1. A positioning system, comprising:

a movable portion supported for movement along a reference plane;

a reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said movable portion; and

a motor movable element for propelling said movable portion along the reference plane,

wherein a first distance between the reference plane and a gravity center position of said movable portion and a second distance between the reference plane and a gravity center position of said reaction force absorbing mechanism are made substantially equal to each other and/or the second distance and a third distance between the reference plane and said motor movable element are made substantially equal to each other.

2. A positioning system according to Claim 1, wherein said reaction force absorbing mechanism comprises a stator of a motor for driving said movable portion.

3. A positioning system according to Claim 1, wherein said reaction force absorbing mechanism is adapted to move the reference plane.

4. A positioning system, comprising:

a movable portion supported for movement in two axial directions being substantially orthogonal to each other along a reference plane;

an X movable member including said movable portion;

a Y movable member including said movable portion;

a first reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said X movable member in a first movement direction; and

a second reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said Y movable member in a second movement direction,

wherein a fourth distance between the reference plane and a gravity center position of said X movable member and a fifth distance between the reference plane and a gravity center position of said first reaction force absorbing mechanism are made substantially equal to each other, and a sixth distance between the reference plane and a gravity center position of said Y movable member and a seventh distance between the reference plane

and a gravity center position of said second reaction force absorbing mechanism are made substantially equal to each other.

5. A positioning system according to Claim 4, wherein said X movable member includes a first beam member for transmitting, to said movable portion, a propulsion force for propelling said movable portion in a first direction, and a first motor movable element for propelling said movable portion in the first direction.

6. A positioning system according to Claim 4, wherein said Y movable member includes a second beam member for transmitting, to said movable portion, a propulsion force for propelling said movable portion in a second direction, and a second motor movable element for propelling said movable portion in the second direction.

7. A positioning system according to Claim 4, wherein said X movable member includes said movable portion, a second movable portion provided on said movable portion, a first beam member for transmitting, to said movable portion, a propulsion force for propelling said movable portion in a first direction, and a first motor

movable element for propelling said movable portion in the first direction.

8. A positioning system according to Claim 4, wherein said Y movable member includes said movable portion, a second movable portion provided on said movable portion, a second beam member for transmitting, to said movable portion, a propulsion force for propelling said movable portion in a second direction, and a second motor movable element for propelling said movable portion in the second direction.

9. A positioning system according to Claim 7, wherein said second movable portion comprises a fine-motion stage for adjusting a position and an attitude of said movable portion.

10. A positioning system according to Claim 8, wherein said second movable portion comprises a fine-motion stage for adjusting a position and an attitude of said movable portion.

11. A positioning system, comprising:

a movable portion supported for movement in two axial directions being substantially orthogonal to each other along a

reference plane;

a first guide member for guiding said movable portion in a first direction;

a second guide member for guiding said movable portion in a second direction;

a first reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said movable portion in a first direction; and

a second reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said movable portion in a second direction,

wherein an eighth distance between the reference plane and a gravity center position of said first guide member and a ninth distance between the reference plane and a gravity center position of said first reaction force absorbing mechanism are made substantially equal to each other, and a tenth distance between the reference plane and a gravity center position of said second guide member and an eleventh distance between the reference plane and a gravity center position of said second reaction force absorbing mechanism are made substantially equal to each other.

12. A positioning system, comprising:

a movable portion supported for movement in two axial directions being substantially orthogonal to each other along a reference plane;

a first motor movable element for propelling said movable portion in a first direction along the reference plane;

a second motor movable element for propelling said movable portion in a second direction along the reference plane;

a first reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said movable portion in the first direction; and

a second reaction force absorbing mechanism for absorbing a propulsion reaction force to be produced by motion of said movable portion in the second direction,

wherein a twelfth distance between the reference plane and a gravity center position of said first motor movable element and a thirteenth distance between the reference plane and a gravity center position of said first reaction force absorbing mechanism are made substantially equal to each other, and a fourteenth distance between the reference plane and a gravity center position of said second motor movable element and a

fifteenth distance between the reference plane and a gravity center position of said second reaction force absorbing mechanism are made substantially equal to each other.

13. A positioning system, comprising:

a movable portion supported for movement in two axial directions being substantially orthogonal to each other along a reference plane;

a first guide member for guiding said movable portion in a first direction; and

a first motor movable element for propelling said movable portion in a first direction along the reference plane,

wherein an eighth distance between the reference plane and a gravity center position of said first guide member and a twelfth distance between the reference plane and said first motor movable element are made substantially equal to each other.

14. A positioning system, comprising:

a movable portion supported for movement in two axial directions being substantially orthogonal to each other along a reference plane;

a second guide member for guiding said movable portion in a second direction; and

a second motor movable element for propelling said movable portion in a second direction along the reference plane,

wherein a tenth distance between the reference plane and a gravity center position of said second guide member and a fourteenth distance between the reference plane and said second motor movable element are made substantially equal to each other.

15. A positioning system according to Claim 11, wherein at least one of said first guide member and said second guide member includes a plurality of guiding elements spaced from each other with respect to a direction of the reference plane.

16. A positioning system according to Claim 11, wherein said first and second reaction force absorbing mechanisms include a stator of a motor for driving said movable portion.

17. A positioning system according to Claim 12, wherein said first and second reaction force absorbing mechanisms include a stator of a motor

for driving said movable portion.

18. An exposure apparatus, comprising:

an original positioning system for holding an original and for moving the original to a predetermined position and positioning the same at the predetermined position;

a substrate positioning system for holding a substrate and for moving the substrate to a predetermined position and positioning the same at the predetermined position; and

a projection optical system for projecting a pattern of the original onto the substrate,

wherein at least one of said original positioning system and said substrate positioning system comprises a positioning system as recited in Claim 1.

19. A device manufacturing method, comprising the steps of:

applying a photosensitive agent to a substrate;

exposing the substrate by use of an exposure apparatus as recited in Claim 18; and

developing the exposed substrate.